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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/590,924	06/09/2000	Yaoqi J. Liu	11605-001001	3174

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EXAMINER

CHEN, VIVIAN

ART UNIT	PAPER NUMBER
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1773

8

DATE MAILED: 12/26/2001

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/590,924

Applicant(s)

LIU ET AL.

Examiner

Vivian Chen

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-- Th MAILING DATE of this communication appears on the cover sheet with the corresponding address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) 1-13 and 25-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 14-24 and 41-54 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 June 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of Group II (claims 14-24, 41-54) in Paper No. 6 is acknowledged.
2. Claims 1-3, 25-40 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 6.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claims 14-24, 41-54 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 14, 16, 41, 49, 52, the phrase "without substantial wrinkling" is vague and indefinite because it is unclear what constitutes "substantial" wrinkling.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 14-24, 41-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over WHEATLEY ET AL (US 6,049,419) in view of NISHIHARA ET AL (US 4,465,736).

WHEATLEY ET AL discloses a birefringent multilayer polymeric film which reflects light having a wavelength of 700 to 1200 nm (lines 57-68, col. 8) wherein the film comprises alternating layers of a first polymer such as PEN, coPEN, PET, or coPET and a second polymer such as PMMA (line 60, col. 11 to line 41, col. 16), wherein the film is heat-set to control shrinkage (lines 10-26, col. 24) as indicated in claims 14-21, 43-44, 49. The film may be situated between two glass layers to form laminate windshields for vehicles (lines 40-54, col. 32) as recited in claim 47-52. The film further incorporates at least one energy-absorbing layer (line 50, col. 25 to line 20, col. 28) as recited in claims 41-42, 45. However the reference does not explicitly disclose a film which capable of shrinking to conform to a curved surface.

NISHIHARA ET AL discloses that it is well known in the art to incorporate a heat-shrinkable, selectively reflective film having a shrinkage of less than 5% in a laminated glass structure in order to eliminate wrinkles in the selectively reflective film (lines 27-35, col. 1; lines 19-55, col. 5) as recited in claims 14, 20, 22-23, 42, wherein the laminate glass structure comprises a first glass layer, a first polyvinyl butyral (PVB) layer, the selectively reflective layer, a second PVB layer, and a second glass layer (Figure 2) as recited in claims 49, 52.

It would have been obvious to one of ordinary skill of the art at the time the invention was made to adjust shrinkage properties of the film of WHEATLEY ET AL '419 and to

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incorporate said shrinkable films into known laminate glass structures as disclosed in NISHIHARA ET AL in order to produce wrinkle-free infrared-reflecting transparent structures. One of ordinary skill in the art would have readily adjusted the heat-setting conditions of the film of WHEATLEY ET AL '419 to obtain the optimum shrinkage characteristics in various directions for particular laminate-forming conditions and glass curvatures as indicated in claim 24. It would have been obvious to incorporate conventional features into the laminate windshield such as a shade band layer as indicated in claim 46, 54 in order to minimize glare and improve visibility. Conventional windshields for automobiles and other vehicles typically have a degree of curvature as indicated in claims 50, 53.

5. Claims 14-24, 41-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over NISHIHARA ET AL (US 4,465,736) in view of WHEATLEY ET AL (US 6,049,419).

NISHIHARA ET AL discloses a laminate glass structure comprises a first glass layer, a first polyvinyl butyral (PVB) layer, a heat-shrinkable, selectively reflective film having a shrinkage of less than 5%, a second PVB layer, and a second glass layer (Figure 2; lines 27-35, col. 1; lines 19-55, col. 5) as recited in claims 14, 20, 22-23, 42, 49, 52. However the reference does not explicitly disclose a dielectric multilayer reflective film.

WHEATLEY ET AL discloses that it is well known in the art to use a birefringent multilayer polymeric film which reflects light having a wavelength of 700 to 1200 nm (lines 57-68, col. 8) between two glass layers to form transparent, infrared-reflecting laminate windshields for vehicles (lines 40-54, col. 32) as recited in claim 47-52, wherein the film comprises alternating layers of a first polymer such as PEN, coPEN, PET, or coPET and a second polymer

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such as PMMA (line 60, col. 11 to line 41, col. 16), and wherein the film is heat-set to control shrinkage (lines 10-26, col. 24) as indicated in claims 14-21, 43-44, 49. The film further incorporates at least one energy-absorbing layer (line 50, col. 25 to line 20, col. 28) as recited in claims 41-42, 45.

It would have been obvious to one of ordinary skill of the art at the time the invention was made to utilize the reflective film of WHEATLEY ET AL '419 into known laminate glass structures as disclosed in NISHIHARA ET AL and to make said film slightly shrinkable in order to produce wrinkle-free infrared-reflecting transparent structures. One of ordinary skill in the art would have readily adjusted the heat-setting conditions of the film of WHEATLEY ET AL '419 to obtain the optimum shrinkage characteristics in various directions for particular laminate-forming conditions and glass curvatures as indicated in claim 24. It would have been obvious to incorporate conventional features into the laminate windshield such as a shade band layer as indicated in claim 46, 54 in order to minimize glare and improve visibility. Conventional windshields for automobiles and other vehicles typically have a degree of curvature as indicated in claims 50, 53.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

ARENDS ET AL (US 5,360,659) and WHEATLEY ET AL (US 5,095,210) disclose selectively reflective optical films.


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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vivian Chen whose telephone number is (703) 305-3551. The examiner can normally be reached on Monday from 8:30 AM to 6 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau, can be reached on (703) 308-2367. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-3601.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

December 15, 2001


Vivian Chen
Primary Examiner
Art Unit 1773